

Amendments to the Specification:

Please replace the title of the invention with the following amended title of the invention:

Method and Apparatus for Communicating Data in a GPRS Network based on a Plurality of Traffic Classes

Please replace the paragraph beginning at page 2, line 6 with the following amended paragraph:

As currently specified, data packets are transported between a SGSN and GGSN using IP tunnels, as known in the art. For example, a given GGSN 108 encapsulates an IP packet destined to the MS 122 into another IP packet after attaching a GTP header to it. The outer (or encapsulating) IP header has the serving SGSN's 112 (i.e., the one that maintains the current mobility context for the MS) IP address as the destination address. The encapsulated packet is then forwarded through the CN 102 using hop-by-hop forwarding. At the serving SGSN 112, the outer IP header is stripped. The serving SGSN 112 uses the GTP header to forward the packet to the MS 122 via the appropriate BSS 118 using link layer procedures, i.e., over a radio access bearer. The GPRS Tunneling Protocol implemented at each of the SGSN 112-116 and GGSN 108-110 is responsible for performing these tasks of encapsulation and mapping onto an appropriate radio access bearer. Packet Data Protocol (PDP) is used to perform signaling tasks of GTP. A more detailed depiction of the various communication protocols used in current GPRS systems is illustrated in FIG. 2. In particular, a protocol "stack" is shown at each device inclusively between the MS and GGSN. Based on the Open System Interconnection (OSI) model, each layer of the respective protocol stacks represents an additional layer of functionality. Physical communication, e.g., modulation protocols and the like, occurs at the lowest layer, whereas the most functionality occurs at the top. Each of the various layers illustrated in FIG. 2 are well known in the art and are discussed in greater detail in ETSI Standard GSM 03.60, Release 1997, entitled "General Packet Radio Services (GPRS): Service Description," the teachings of which are incorporated herein by this reference. The solid lines between layers indicate peering relationship (i.e., residing at the same protocol layer) between protocol layers.

Note, for example, that GTP is terminated in the SGSN-SGSN and GGSN. Also note that there

are typically a number of intermediate nodes between the GGSN and SGSN, although only a single intermediate node is illustrated in FIG. 2 for clarity.

Please replace the paragraph beginning at page 10, line 6 with the following amended paragraph:

As known in the art, it is noted that DiffServ can operate with or without MPLS. Thus, either MPLS or DiffServ or, preferably, both can be used to support various QoS levels within a GPRS network. When used in conjunction with MPLS, the packet classification function attendant to DiffServ also provides mapping of IP packets to appropriate MPLS paths (LSPs) through the CN. Regardless, the use of MPLS at the ~~SSGN-SGSN~~ or ~~GSGN-GGSN~~ and/or DiffServ at the intermediate nodes allows various QoS levels to be implemented in GPRS networks.

Please replace the paragraph beginning at page 12, line 26 with the following amended paragraph:

Referring now to FIG. 6, an alternative embodiment of the present invention is illustrated. At step 602, an ingress GSN, such as an SGSN or GGSN, assesses incoming data (i.e., from an MS or public network) to determine a traffic class corresponding to the incoming data. At step 604, a per-hop behavior group, preferably represented by a DiffServ Code Point, is assigned to the data based on the determined traffic class. Thereafter, at step 606, at least a portion of the data is transmitted to an intermediate node, preferably within a GPRS CN. Based on the per-hop behavior group, at step 608, the intermediate node handles the portion of the data. In the context of the present invention, the term “handle” encompasses all aspects of queuing and forwarding the portion of the data within the intermediate node. Additionally, although the process of FIG. 6 is illustrated in terms of a single intermediate node, it is understood that it is possible, even likely, that a number of intermediate nodes may handle data in the manner described in FIG. 6.